City of SACRAMENTO

Indoor Heat Illness Prevention Policy

Scope: CITYWIDE

Policy Contact:
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Table of Contents

Regulatory References:
California Code of Regulations (CCR) Title 8 § 3396

Supersedes:
N/A - New

Reviewed/Effective:
12/20/2024

I. Purpose

This document establishes the City of Sacramento's (City) Heat Illness Prevention Program for indoor places of employment to control the risk of the occurrence of heat illness in accordance with California Code of Regulations (CCR) Title 8 § 3396.

II. Scope

Except as indicated below, this program applies to all indoor City workplaces when employees are present and where the indoor temperature equals or exceeds 82 degrees. Additional measurement requirements are triggered when the conditions of Section IV.A, Indoor Workplace Applicability, are met.

The program does not apply in any of the following:

- When an employee is working remotely from a location that is not under the control of the City.
- During incidental heat exposures where an employee is exposed to indoor temperatures at or above 82 degrees and below 95 degrees for less than 15 minutes in any 60-minute period. This exception does not apply to vehicles without effective and functioning air conditioning, or to shipping containers during loading, unloading, or related work.
- Emergency operations directly involved in the protection of life or property.

III. Definitions

Acclimatization: The process or result of the body becoming accustomed to work in the heat by gradually exposing a person to it. Acclimatization peaks in most people within four (4) to fourteen (14) days of regular work for at least two (2) hours per day in the heat.

Administrative Control: A method to limit exposure to a hazard by adjustment of work procedures, practices, or schedules. Examples of administrative controls that may be effective at minimizing the risk of heat illness in a particular work area include, but are not limited to: relocating employees to a location(s) that is cooler, allowing for more rest breaks, acclimatizing employees, rotating employees, scheduling work earlier or later in the day, using work/rest schedules, reducing work intensity or speed, reducing work hours, changing required work clothing, using relief workers, and allowing eligible employees to work remotely if appropriate for the position, and authorized by their supervisor.

Clothing that Restricts Heat Removal: Full-body clothing covering the arms, legs, and torso that is any of the following:

- Waterproof.
- Designed to protect the wearer from a chemical, biological, radiological, or fire-

hazard.
- Designed to protect the wearer or the work process from contamination.

Note: "clothing that restricts heat removal" does not include all the following:

- Constructed only of knit or woven fibers, or otherwise an air and water vapor permeable material; and
- Worn in lieu of the employee's street clothing; and
- Worn without a full-body thermal, vapor, or moisture barrier.

Cool-down Area: An indoor or outdoor area that is blocked from direct sunlight and shielded from other high radiant heat sources to the extent feasible and is either open to the air or provided with ventilation or cooling. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. A cool-down area does not include a location where any of the following exist:

- Environmental risk factors defeat the purpose of allowing the body to cool.
- Employees are exposed to unsafe or unhealthy conditions.
- Employees are deterred or discouraged from accessing or using the cool-down area.

Engineering Control: A method of control or a device that removes or reduces hazardous conditions or creates a barrier between the employee and the hazard. Examples of engineering controls that may be effective at minimizing the risk of heat illness in a particular work area include, but are not limited to: isolation of hot processes, isolation of employees from sources of heat, air conditioning, cooling fans, cooling mist fans, evaporative coolers (also called swamp coolers), natural ventilation where the outdoor temperature or heat index is lower than the indoor temperature or heat index, local exhaust ventilation, shielding from a radiant heat source, and insulation of hot surfaces.

Environmental Risk Factors for Heat Illness: Working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

Globe Temperature: The temperature measured by a globe thermometer, which consists of a thermometer sensor in the center of a six-inch diameter hollow copper sphere painted on the outside with a matte black finish, or equivalent. The globe thermometer may not be shielded from direct exposure to radiant heat while the globe temperature is being measured.

Heat Cramps: Painful, involuntary muscle spasms that usually occur during heavy exercise or strenuous activity in hot environments. Inadequate fluid intake often contributes to heat cramps. Spasms may be more intense and more prolonged than typical nighttime leg

cramps. Muscles most often affected include calf, arm, abdomen, and back, although heat cramps may involve any muscle group involved in the activity.

Heat Exhaustion: A form of heat illness which can develop after several days of exposure to high temperatures and/or inadequate or unbalanced replacement of fluids. Those most prone to heat exhaustion are the elderly, those with high blood pressure, and those working or exercising in a hot environment. Untreated, heat-exhaustion may lead to heat stroke. Symptoms include cool, moist, pale, flushed, or red skin; heavy sweating; headache; nausea or vomiting; dizziness; giddiness; and/or extreme weakness or fatigue. The skin is clammy and moist while the body temperature can be near normal or slightly elevated, not exceeding 104 degrees.

Heat Illness: A serious medical condition resulting from the body's inability to cope with a particular heat load. Heat illness includes (in increasing severity) heat cramps, heat exhaustion, heat syncope, and heat stroke.

Heat Index: An index that combines air temperature and relative humidity to determine an apparent temperature, or how hot it feels. High humidity reduces the body's ability to get rid of excess heat via perspiration, so for a given air temperature, the higher the humidity, the higher the apparent temperature or heat index. For the purposes of this program, heat index refers to conditions in indoor work area. Radiant heat is not included in the heat index. *(See Appendix B, National Weather Service Heat Index).*

Heat Load: The amount of heat energy that needs to be added to maintain a desired temperature setpoint. It may also be referred to as heating load or thermal load.

Heat Stroke: Heat stroke is the most serious heat-related illness. It occurs when the body can no longer control its temperature: the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106 degrees or higher within 10 to 15 minutes.

Heat Syncope: A fainting (syncope) episode or dizziness that usually occurs when standing for too long or suddenly standing up after sitting or lying. Factors that may contribute to heat syncope include dehydration and lack of acclimatization.

Heat Wave: Any day in which the predicted high outdoor temperature will be at least 80 degrees and at least ten (10) degrees higher than the average high daily outdoor temperature in the preceding five (5) days.

High Radiant Heat Area: A work area where the globe temperature is at least five (5) degrees greater than the temperature of the workspace where employees are located.

High Radiant Heat Source: Any object, surface, or other source of radiant heat that, if not shielded, would raise the temperature of the cool-down area five (5) degrees or more.

Indoor: A space that is under a ceiling or overhead covering that restricts airflow and is enclosed along its perimeter by walls, windows, dividers, or other physical barriers that

restrict airflow, whether open or closed. Work areas that are not indoors are considered outdoors and covered under the Heat Illness Prevention Program. Exception: indoor does not include shaded areas that meet the shade requirements of the Heat Illness Prevention Program and are used exclusively as a source of shade for employees under the requirement.

Personal Heat-Protective Equipment: Equipment worn to protect employees against heat illness. Examples include, but are not limited to, water-cooled garments, air-cooled garments, cooling vests, wetted over-garments, heat-reflective clothing, and supplied-air personal cooling systems.

Personal Risk Factors for Heat Illness: Factors such as an individual's age, degree of acclimatization, overall health, water consumption, alcohol consumption, caffeine consumption, and use of medications which affect the body's water retention or other physiological responses to the heat.

Potable Water: Potable water, also known as drinking water, is water that is safe for ingestion, either when consumed directly in liquid form or indirectly through food preparation.

Preventative Cool-Down Rest: A rest taken in a cool-down area to prevent overheating.

Radiant Heat: Heat transmitted by electromagnetic waves and not transmitted by conduction or convection. Radiant heat sources include the sun, hot objects, hot liquids, hot surfaces, and fire. This is the heat felt that is emitted from a hot object without touching it.

Relative Humidity: The amount of moisture in the air relative to the amount that would be present if the air were saturated.

Shade: The blockage of direct sunlight. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. Shade may be provided by any natural or artificial means that does not expose employees to unsafe or unhealthy conditions and that does not deter or discourage access or use.

Shielding: A physical barrier between radiant heat sources and employees that reduces the transmission of radiant heat.

Temperature: The dry bulb temperature in degrees Fahrenheit obtainable by using a thermometer freely exposed to the air without considering humidity or radiant heat, to measure the temperature in the immediate area where employees are located.

Union Representative: A recognized or certified collective bargaining agent representing the employees. Also known as a Recognized Employee Organization (REO).

Workplace: Any place City business and/or training is conducted, including, but not limited to, City buildings and property.

IV. Procedure

Each department, with workers covered by this program, is responsible for implementing the following requirements:

A. Indoor Workplace Applicability

Indoor work areas meeting any of the following conditions must follow the requirements listed under this section in addition to all other requirements of the program. The following factors shall be evaluated to determine if the program applies to an indoor workplace:

1. The indoor temperature is 87 degrees or greater when employees are present.
2. The indoor heat index is 87 degrees or greater when employees are present.
3. Employees wear clothing that restricts heat removal when the indoor temperature is 82 degrees or greater.
4. Employees work in high radiant heat areas when the indoor temperature is 82 degrees or greater.

B. Responsibilities

1. Department heads or designees shall be responsible for:
    a. Designating the employee(s) responsible for purchasing instruments for measurements.
    b. Designating the employee(s) responsible for taking measurements.
    c. Designate where measurement instruments should be stored and ensure that the employee(s) responsible for taking measurements are notified of those locations.
    d. Ensuring the employee(s) responsible for taking measurements are trained on the department's purchased instruments.
    e. Deciding which administrative or engineering controls shall be used when this policy is applicable.
    f. Designating cool-down areas based on the requirements of this policy.
    g. Ensure that all employees receive training as specified in Section IV.G, Providing Training, of this policy.

2. Environmental Health and Safety (EHS) shall be responsible for:

    a. Maintaining a list on the EHS Nexus page of recommended measurement instruments for the departments to purchase from.

    b. Providing consultation to departments regarding the implementation of this policy.

3. Department head designees shall be responsible for:

    a. Taking measurements when required by Section IV.C, Measurements.

    b. Recording measurements as required by Section IV.C, Measurements.

    c. Contacting the department's assigned EHS Specialist for questions related to this policy.

4. Supervisors shall be responsible for:

    a. Requiring employees to drink water frequently when this policy is applicable.

    b. Upon notification that a subordinate employee(s) is/are experiencing heat illness-related symptoms, taking steps to ensure that the employee(s) receive appropriate first aid.

5. Heat-affected employees shall be responsible for:

    a. Notifying their supervisor immediately if they are experiencing heat illness-related symptoms.

    b. Completing the appropriate documentation as specified in Section IV.I, Heat Illness Documentation.

    c. Complying with supervisor's directions to reduce heat exposure.

C. Measurements

Measurements shall only be required when any of the conditions listed in subsection A, above, are met.

1. Measure the indoor temperature and heat index, and record whichever is higher. Establish and maintain accurate records of the measurements, which must include the date, time, and specific location of all measurements. Additionally, identify and evaluate all other environmental risk factors for heat illness.

    a. The indoor temperature and heat index measurements must be taken as follows:

i. The initial measurements must be taken when it is reasonable to suspect that any of the conditions that trigger this section apply where employees work and at times during the work shift when employee exposures are expected to be the highest.

ii. Measurements must be taken again when it can be reasonably expected that the temperature has increased 10 degrees or more from the previous measurements where employees work and at times during the work shift when employee exposures are expected to be the highest.

b. Records of all measurements must be retained for 12 months or until the next measurements are taken, ***whichever is greater***. Additionally, the records must be made available to employees, REOs, and designated representatives as defined in CCR § 3204, and to Cal/OSHA representatives upon request.

c. Instruments used to measure the temperature or heat index must be used and maintained according to the manufacturers' recommendations. National Weather Service (NWS) tables must be used for instruments that measure the heat index. The NWS heat index chart can be found in Appendix B. A list of recommended instruments is available on the Environmental Health & Safety (EH&S) Nexus page.

d. Employees can participate in planning, conducting, and recording temperature/heat index measurements. Employees and REOs are encouraged to report new or previously unidentified environmental risk factors for indoor heat illness to a supervisor or department safety representative and/or participate in safety committee meetings for the purposes of evaluating and correcting environmental risk factors for indoor heat illness.

2. If measuring the temperature and heat index is not feasible to comply with this section, alternatively, it can be assumed that the work area meets one (1) or more of the triggering conditions. The control measures specified below must be used to minimize the risk of heat illness. The selection of the control measure will be based on the environmental risk factors for heat illness in the work area.

   a. Engineering controls: Engineering controls must be used to reduce and maintain both the temperature and heat index to below 87 degrees when employees are present, or to reduce the temperature to below 82 degrees where employees wear clothing that restricts heat removal or work in high radiant heat areas, except when it can be demonstrated that such controls are infeasible. When such controls are infeasible to meet the temperature and heat index thresholds, then engineering controls must be used to

reduce the temperature, heat index, or both, whichever applies, to minimize heat illness to the lowest feasible level, except to the extent that it can be demonstrated that the controls are infeasible.

b. Administrative controls: Where feasible engineering controls are not sufficient to reduce and maintain the temperature and heat index to below 87 degrees when employees are present, or the temperature below 82 degrees where employees wear clothing that restricts heat removal or work in high radiant heat areas, administrative controls shall be used to minimize the risk of heat illness, except to the extent that it can be demonstrated that such controls are infeasible.

c. Personal heat-protective equipment: If feasible engineering controls are not sufficient to reduce and maintain the temperature and heat index to below 87 degrees when employees are present, or the temperature below 82 degrees where employees wear clothing that restricts heat removal or work in high radiant heat areas and feasible administrative controls do not minimize the risk of heat illness, personal heat-protective equipment shall be used to minimize the risk of heat illness, except to the extent that it can be demonstrated that such controls are infeasible.

D. Drinking Water

1. Departments must provide sufficient quantities of drinking water. The water must be located as close as practicable to the areas where employees are working and in indoor cool-down areas. Supervisors must encourage employees to drink water frequently.

2. Where drinking water is not plumbed or otherwise continuously supplied, a sufficient amount of water must be supplied at the beginning of the shift, so each employee has a minimum of one (1) quart of drinking water per hour for the entire shift. A lesser quantity of water may be provided at the beginning of the shift provided there are effective replenishment procedures in place to supply one (1) quart per hour per employee.

3. Water must be potable, fresh, pure, suitably cool, and free of charge.

E. Access to Cool-Down Areas

1. There must be one or more cool-down areas while employees are present and located as close as practicable to areas where employees are working.

2. Employees shall be allowed and encouraged to take a cool-down rest in a cool-down area for a period of no less than five (5) minutes if they feel the need for protection from overheating. Such access to cool-down areas shall be permitted at all times. Employees shall be monitored for symptoms of heat illness and shall

not be ordered back to work until symptoms have abated and at least five (5) minutes have passed.

3. Cool-down areas are required to be sufficient to accommodate all employees taking a rest, cool-down, or meal break at one time, in a normal, seated posture without physical contact with each other.

4. First aid or emergency response must be provided if an employee exhibits signs or reports symptoms of heat illness while taking a preventative cool-down rest.

F. Acclimatization

1. All employees must be closely observed by a supervisor or designee during a heat wave if no engineering controls are in use to control the effect of outdoor heat on indoor temperature.

2. A supervisor or designee shall closely observe employees newly assigned to any of the following work areas for the first fourteen (14) days:

   a. A work area where the temperature or heat index, whichever is greater, equals or exceeds 87 degrees.

   b. A work area where the temperature equals or exceeds 82 degrees for employees who wear clothing that restricts heat removal.

   c. A high radiant heat area where the temperature is 82 degrees or more.

G. Providing Training

Effective training must be provided to all employees and their supervisor(s) before beginning work that may reasonably result in exposure to the risk of heat illness.

Training must include the following information:

1. The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing, and personal protective equipment.

2. The department's/division's procedures for complying with heat illness regulations, including the employer's responsibility to provide water, cool-down rest areas, cool-down rests, control measures, and access to first aid as well as the employee's right to exercise their rights without fear of retaliation.

3. The importance of frequent consumption of small quantities of water, up to four (4) cups of water per hour, to prevent heat illness in hot work environments where employees are likely to be sweating more than usual when working.

4. The concept, importance, and methods of acclimatization or adapting gradually

to the heat.

5. The different types of heat illness as well as the common signs and symptoms, and appropriate first aid and/or emergency responses to the different types of heat illness, additionally, that heat illness may progress quickly from mild signs and symptoms to serious and life-threatening.

6. The importance of employees immediately reporting to the department/division, directly or through the supervisor, signs or symptoms of heat illness in themselves or in co-workers.

7. The department's/division's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.

8. Procedures for contacting emergency medical services [911 from a land line, 9-911 from a City phone, or (916) 732-0100 from a cellular telephone], and, if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.

9. How to provide clear and precise directions to the worksite and designating a person to be available to ensure that emergency procedures are invoked when appropriate.

Additionally, supervisors must also be trained in the following items:

1. Procedures to implement this program; and

2. Procedures to follow when an employee reports or exhibits the signs of heat illness; and

3. How to monitor weather reports and respond to hot weather advisories.

Note: The training for this program can be integrated into the training supervisors receive for outdoor heat illness prevention.

H. Emergency Response Procedures

1. There must be effective means of communication at the workplace for employees to contact their supervisor or emergency medical services, when necessary. These means can include voice, observation, or electronic means. Cell phone and text messaging may only be used if reception in the area is reliable. If an electronic device will not provide reliable communication, there must be an alternative means of summoning emergency medical services, such as calling through a landline.

2. Call 911 if unsure of an employee's symptoms. Decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior, or convulsions require immediate emergency medical response. If an employee shows signs of serious heat illness they must be monitored and not left alone. If the employee's symptoms occur at the end of the work shift, supervisors must ensure the employee receives medical attention before the supervisor goes home.

3. When contacting emergency medical services, transport the employee to a place where they can be reached by emergency responders, if necessary. Provide clear and precise directions to the work location when communicating with emergency responders as needed.

4. Immediately report to EH&S at (916) 808-5278 and to the Workers' Compensation Office at (916) 808-5741 if an employee must be hospitalized as a result of a heat illness incident. After hours, please have the City Operator [311 or (916) 264-5011] contact EH&S. Heat illness incidents that do not require hospitalization do not require a phone call to EH&S and Workers' Compensation.

I. Heat Illness Documentation

The following forms should be completed through Origami for indoor heat illness-related issues:

1. Workers' Compensation (WC001)/Employee Injury Report: Employees who have experienced a heat illness incident, whether hospitalization is required or not, must complete the WC001/Employee Injury Report within twenty-four (24) hours.
2. Near Miss: Employees who did not experience a heat illness incident but instead had a "close call" should complete the Near Miss form within twenty-four (24) hours.
3. Safety Observation: The Safety Observation form should be completed to report safety concerns (unsafe acts or conditions). The Safety Observation form should be completed as soon as possible, but no later than the next business day.

City of SACRAMENTO

Charter Officer Review and Acknowledgement

INDOOR HEAT ILLNESS PREVENTION POLICY

(Signature by all Charter Officers is not a requirement for policy adoption)

Howard Chan (Dec 20, 2024 11:19 PST)

City Manager 12/20/2024

Susana Alcala Wood (Jan 15, 2025 17:57 PST)

City Attorney 01/15/2025

City Clerk 01/09/2025

John Colville (Dec 20, 2024 12:08 PST)

City Treasurer 12/20/2024

City Auditor

Appendix A
Causes, Signs, and Symptoms of Heat Illness

The following is a summary of the causes, signs, and symptoms as well as treatment of the types of common heat illnesses.

1. **Heat cramps** are caused by strenuous activity in the heat. People who perspire more than average during strenuous activity are more prone to heat cramps. The perspiration depletes the body's salt and moisture. The low salt level in the muscles causes painful cramps. Heat cramps may also be a symptom of heat exhaustion. If you suspect heat cramps:
    a. Have the employee stop all activity and sit quietly in a cool place.
    b. Have the employee rest briefly and cool down.
    c. Make sure the employee drinks cool water (not iced), clear juice, or a sports beverage containing electrolytes.
    d. Have the employee practice gentle, range-of-motion stretching and gentle massage of the affected muscle group.
    e. Advise the employee that returning to **strenuous** activity after the cramps subside may lead to heat exhaustion or heat stroke.
    f. If symptoms do not go away in one hour, seek medical attention.
2. **Heat exhaustion** is caused by excessive heat and dehydration. The warning signs of heat exhaustion include heavy perspiring; paleness; muscle cramps; tiredness; weakness; dizziness; headache; nausea or vomiting; and fainting. Symptoms of heat exhaustion may be cool and moist skin, pulse rate will be fast and weak, and breathing will be fast and shallow. If heat exhaustion is untreated, it may progress to heat stroke. If you suspect heat exhaustion:
    a. Get the employee out of the sun and into a shady or air-conditioned location.
    b. Lay the employee down and elevate the legs and feet slightly.
    c. Have the employee loosen or remove their clothing.
    d. Have the employee drink cool water (not iced), clear juice, or a sports beverage containing electrolytes.
    e. Cool the employee by spraying or sponging them with cool water and fanning.
    f. Ice packs may be applied under the arms and in the groin area.
    g. Seek medical attention.

3. **Heat syncope** (or fainting) is caused by strenuous activity in hot environments and dehydration. Heat syncope can be caused by blood pooling in the legs if a person has been standing still for a long time in a hot environment. It can also be caused by vigorous physical activity for two (2) or more hours before the fainting happens. The risk of developing heat syncope increases when a person has not acclimated to a hot environment. The warning signs for heat syncope include pale, cool, and moist skin, feeling faint or lightheaded, lightheadedness when a person changes position, such as moving from a lying position to a standing position, and being dehydrated. If you suspect heat syncope:

    a. Get the employee out of the sun and into a shady or air-conditioned location.

    b. Lay the employee down and elevate the legs and feet slightly.

    c. Have the employee drink cool water (not iced), clear juice, or a sports beverage containing electrolytes.

    d. Cool the employee by spraying or sponging them with cool water and fanning.

    e. Ice packs may be applied under the arms and in the groin area.

    f. If symptoms do not go away in one hour, seek medical attention.

4. **Heat stroke** is caused when the body's mechanism for dealing with heat stress, such as perspiring and temperature control, are lost. The main sign of heat stroke is elevated body temperature, generally greater than 104 degrees. The warning signs of heat stroke include red, hot, and dry skin; rapid heartbeat; rapid and shallow breathing; elevated or lowered blood pressure; cessation of sweating; irritability, confusion, or unconsciousness; and fainting. If you suspect heat stroke:

    a. Move the employee out of the sun and into a shady or air-conditioned space.

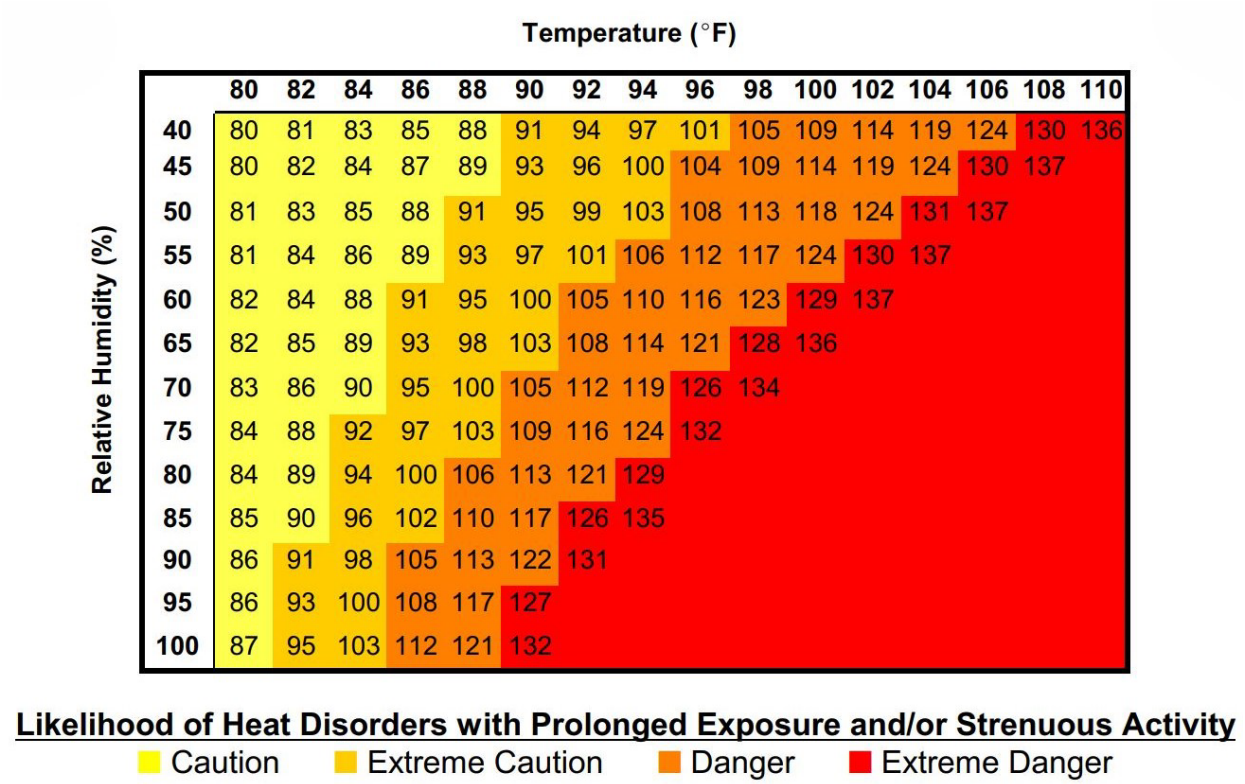
    b. Dial 911 from a landline or call (916) 732-0100 from a cellular telephone for emergency medical assistance.

    c. Cool the employee by covering them with damp sheets or by spraying with cool water and fanning.

    d. Ice packs may be applied under the arms and in the groin area.

If an employee experiences loss of consciousness for any reason or becomes hospitalized, immediately report this to the Environmental, Health & Safety Office (EH&S) at (916) 808-5278 and to the Workers' Compensation Office at (916) 808-5741. After hours, please have the City Operator [311 or (916) 264-5011] contact EH&S.

Appendix B
National Weather Service Heat Index



Source: https://www.weather.gov/media/unr/heatindex.pdf